THE STATUS OF THE HOSPITAL
INSURANCE TRUST FUND

The estimates in Table A-1 show a negative balance in the HI trust fund by the end of 1988. For 1985 and beyond, the estimates assume that the payment rates created under the newly passed hospital reimbursement plan will be updated each year so as to maintain the same level of stringency as would have occurred had limits in TEFRA been extended.

TABLE A-1. PROJECTIONS OF HOSPITAL INSURANCE TRUST FUND BALANCES IF TEFRA REIMBURSEMENT LIMITS ARE EXTENDED (By calendar year, in billions of dollars)

| | Outlays[a] | Income[b] | Annual Surplus (Excluding Any Negative Interest) | Year-End Balance |
|---|---|---|---|---|
| 1985 | 50.9 | 49.5 | -1.4 | 6.0 |
| 1986 | 57.1 | 56.4 | -0.6 | 5.4 |
| 1987 | 64.3 | 60.3 | -4.0 | 1.4 |
| 1988 | 72.3 | 63.9 | -8.2 | -7.0 |
| 1989 | 81.3 | 67.5 | -12.8 | -20.8 |
| 1990 | 91.5 | 70.9 | -18.3 | -41.4 |
| 1991 | 102.9 | 74.0 | -24.9 | -70.3 |
| 1992 | 115.6 | 76.5 | -32.5 | -109.3 |
| 1993 | 129.9 | 78.6 | -41.3 | -160.5 |
| 1994 | 146.0 | 80.1 | -51.4 | -226.5 |
| 1995 | 164.2 | 80.4 | -63.2 | -310.3 |

SOURCE: Preliminary CBO estimates.

NOTE: Minus signs denote deficits.

a. Assumes hospital payment rates set so as to result in the same reductions in reimbursements as would have occurred if TEFRA had been extended (about 9 percent).

b. Income to the trust funds is budget authority. It includes payroll tax receipts, interest on balances, and certain general fund transfers. In years when balances are negative, income includes negative interest, which is the amount that would be paid by the trust fund on hypothetical borrowings required to continue benefit payments.

## APPENDIX B.  METHODOLOGY AND DATA

As noted in Chapter III, data on health care use by individuals are only available for 1977-1978. To make such information comparable to 1984, it was necessary to inflate medical expenditures. The inflators used for HI and SMI were based on actual 1977 and 1978 benefits per enrollee and on CBO projections for 1984. Separate inflators were used for the elderly and disabled. In several cases, overall medical expenditures were also projected for the elderly, using as an inflator the weighted average of the HI and SMI inflators.

Four other adjustments were made to the data, particularly relating to the estimates presented in Chapter V. First, a greater proportion of Medicare enrollees exceeded the SMI deductible in 1982 than was the case in 1978.[1] Since the program data from the Medicare History Sample contain no information on those with expenditures below the deductible, an arbitrary adjustment was used to simulate their expenditures. Second, the National Medical Care Expenditure Survey (NMCES) implicitly understates SMI reimbursements for the elderly, so it was adjusted to conform more closely to 1977 aggregate figures.[2] Third, while the distribution of hospital stays seems to be quite consistent with more recent data, the total hospital days projected for 1984 are understated in the sample used. Consequently, the savings estimates were adjusted upward to reflect the greater number of days, but the distribution of hospital days by individuals were not adjusted.

For the elderly, some of the tables in Chapters III and V disaggregate medical expenditures by income category, expressed in 1984 dollars. The Consumer Price Index (CPI) was used to inflate incomes for the elderly since a large share of the income of this group is directly tied to increases in the CPI.

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1. This is probably due in large part to the fact that the deductible has not kept pace with the rise in health care prices.

2. The NMCES was not established for the purpose of calculating SMI reimbursements, so the categories of health care defined in the survey do not directly correspond to SMI coverage.

# APPENDIX C.   PATTERNS OF HEALTH CARE USE BY THE ELDERLY

This appendix provides some additional information on the specific patterns of use of hospital care and physician services by elderly beneficiaries. Hospital use, which dominates the HI portion, varies the most by age and income. In contrast, visits to physicians are more uniformly distributed across the aged population.

The variations in these two major parts of Medicare coverage are reflected in the differences in HI and SMI reimbursements (see Table C-1). Average Medicare reimbursements by age group are of interest since such breakdowns reflect differences in health status. The older the beneficiary, the more likely he or she is to experience health problems. Differences in Medicare reimbursement by age are largely a result of differences in hospitalization. The pattern of reimbursement by age is much more pronounced for HI, which is dominated by inpatient hospital services. Reimbursements are more than twice as great for enrollees aged 80 and above as for enrollees 65 through 69. Moreover, if physician reimbursement--the largest component of SMI--is calculated for those who did not have any inpatient hospital stays in 1978, the amounts are nearly equal among all age groups.

TABLE C-1.   AVERAGE MEDICARE REIMBURSEMENT PER ENROLLEE BY AGE, 1978 (In 1984 dollars)

| Age of Enrollee | HI[a] | SMI[a] | Total[a] |
|---|---|---|---|
| 65-69 | 885 | 517 | 1,402 |
| 70-74 | 995 | 559 | 1,554 |
| 75-79 | 1,238 | 592 | 1,830 |
| 80 and Above | 1,781 | 704 | 2,485 |
| All Elderly Enrollees | 1,186 | 587 | 1,773 |

SOURCE:  Medicare History Sample.

a.   Sample is limited to those enrolled in both HI and SMI.

## HOSPITAL USE

Just over 20 percent of all elderly enrollees had a hospital stay in 1978. Variations in hospital use are extremely sensitive to the age of the enrollee. Among those over 65, the older the enrollee the more likely he or she is to have a hospital stay and the longer that average stay will be (see Table C-2).

TABLE C-2. PATTERNS OF HOSPITALIZATION FOR MEDICARE ENROL-
LEES BY AGE, 1978

| Age | Percent with at Least One Hospital Stay | Average Covered Days of Care Received for Those with at Least One Stay |
|---|---|---|
| 65-69 | 16.2 | 14.9 |
| 70-74 | 18.3 | 14.7 |
| 75-79 | 22.0 | 15.7 |
| 80 and Above | 27.6 | 17.8 |
| All Elderly Enrollees | 20.5 | 15.2 |

SOURCE:  Medicare History Sample.

Hospital use shows little variation by income level except for the approximately 10 percent of persons with incomes above $30,000 (in 1984 dollars). For them, use and length of stay are shorter. The results shown here are controlled for age as well as income because these two variables interact (see Table C-3). Since the very old tend to have lower incomes and higher hospital use, some of the differences attributable to age differences would otherwise appear to be correlated with income. For those under 75, hospital use is greater in the middle-income ranges, while older persons' hospital use is highest in the bottom two income categories.

These results imply that the burden of expanded hospital coinsurance would fall disportionately on those over 75 with low and moderate incomes. On average, about one-and-one-half times as many of those enrollees had in excess of 20 nights in a hospital over the course of a year than their younger counterparts. Moreover, the burden of any change in out-of-pocket costs tied to number of hospital days would be concentrated among a small percentage of total beneficiaries.

TABLE C-3. HOSPITAL STAYS AND USE BY AGE GROUP AND INCOME LEVEL FOR NONINSTITUTIONALIZED ELDERLY MEDICARE ENROLLEES, 1977 (In percents)

| Age Group and Income Level (1984 dollars) | Persons With at Least One Hospital Stay | Persons With More Than 10 Hospital Nights | Persons With More Than 20 Hospital Nights |
|---|---|---|---|
| 65 through 74 | 17.5 | 7.6 | 3.9 |
| $5,000 and less | 15.4 | 9.0 | 4.7 |
| $5,001 - 10,000 | 20.2 | 8.4 | 4.6 |
| $10,001 - 15,000 | 17.5 | 5.9 | 3.3 |
| $15,001 - 20,000 | 14.7 | 6.7 | 4.1 |
| $20,001 - 30,000 | 21.1 | 8.9 | 4.5 |
| $30,001 and above | 14.8 | 7.2 | 3.0 |
| | | | |
| 75 and Above | 22.9 | 12.0 | 6.8 |
| $5,000 and less | 21.9 | 11.7 | 7.2 |
| $5,001 - 10,000 | 26.0 | 14.4 | 6.6 |
| $10,001 - 15,000 | 25.8 | 13.1 | 8.0 |
| $15,001 - 20,000 | 21.8 | 12.8 | 7.1 |
| $20,001 - 30,000 | 20.6 | 8.9 | 6.9 |
| $30,001 and above | 18.8 | 9.7 | 4.8 |
| | | | |
| All Noninstitutionalized Elderly Enrollees | 19.6 | 9.3 | 5.0 |

SOURCE: National Medical Care Expenditure Survey.

PHYSICIAN SERVICES

Among elderly Medicare beneficiaries, there is little variation in use of physicians' services, which represent the largest portion of SMI (see Table C-4). This finding is consistent with the overall average level of SMI benefits described earlier. Visits vary with age, but not in a consistent fashion. Those aged 75 to 79 had the highest average number of visits.

TABLE C-4. PHYSICIAN VISITS OF NONINSTITUTIONALIZED ELDERLY MEDICARE ENROLLEES BY AGE, 1977

| Age | Average Number of Physician Visits | Percent of Enrollees With More Than 10 Visits |
|---|---|---|
| 65-69 | 5.8 | 17.7 |
| 70-74 | 5.9 | 16.0 |
| 75-79 | 6.6 | 21.0 |
| 80 and Above | 6.1 | 18.6 |
| All Noninstututionalized Elderly Enrollees | 6.0 | 18.0 |

SOURCE: National Medical Care Expenditure Survey.

When similar comparisons are made by income class (expressed in 1984 dollars), physician visits for elderly Medicare enrollees are lowest at either extreme (see Table C-5). Enrollees with incomes above $30,000 display the lowest rates. In part, this reflects the fact that, among the elderly, higher-income families are those with wage and salary income, and earners are more likely to be healthy. In general, physician visits are much more evenly distributed across beneficiaries than are hospital days and stays, as is indicated by the proportion of enrollees with more than ten physician visits (see Tables C-4 and C-5).

TABLE C-5. PHYSICIAN VISITS OF NONINSTITUTIONALIZED ELDERLY
MEDICARE ENROLLEES BY INCOME CATEGORY, 1977

| Family Income Category (1984 dollars) | Average Number of Physician Visits | Percent of Enrollees with More Than 10 Visits |
|---|---|---|
| $5,000 and Less | 6.1 | 19.3 |
| $5,001 - $10,000 | 6.7 | 20.4 |
| $10,001 - $15,000 | 6.2 | 16.9 |
| $15,001 - $20,000 | 5.8 | 16.3 |
| $20,001 - $30,000 | 5.9 | 18.3 |
| $30,001 and Above | 5.5 | 17.1 |
| All Noninstitutionalized Elderly Enrollees | 6.0 | 18.1 |

SOURCE: National Medical Care Expenditure Survey.

## APPENDIX D. PATTERNS OF HEALTH CARE USE BY THE DISABLED

On average, the disabled are higher users of Medicare-covered services than are elderly beneficiaries. The average reimbursement for the disabled is projected to be $2,136 in 1984 (see Table D-1). The discrepancy in use is greater for SMI services than for HI.

It is projected that the disabled will average $588 in Medicare-related cost-sharing in 1984, of which $467 will be for SMI premiums, deductible amounts, and coinsurance. These averages are higher than for the elderly, although only by 16 percent overall. The proportion of beneficiaries in the highest cost-sharing category (over $4,000) is twice as high as for the elderly, although both figures are very small (see Table D-3).

TABLE D-1. AVERAGE MEDICARE REIMBURSEMENT PER DISABLED ENROLLEE BY AGE, 1978 (In 1984 dollars)

| Age of Enrollee | HI[a] | SMI[a] | Total[a] |
|---|---|---|---|
| Less than 45 | 1,017 | 669 | 1,685 |
| 45 to 54 | 1,412 | 850 | 2,262 |
| 55 to 64 | 1,463 | 853 | 2,316 |
| All Disabled | 1,333 | 804 | 2,136 |

SOURCE: Medicare History Sample.

a. Sample is limited to those enrolled in both HI and SMI and does not include those with end-stage renal disease.

TABLE D-2.  DISTRIBUTION OF DISABLED ENROLLEES BY LEVEL OF
          REIMBURSEMENT, 1978

| Total Reimbursement (1984 dollars) | Percent of Disabled Enrollees[a] |
|---|---|
| $0 | 47.6 |
| $1 - $500 | 19.9 |
| $501 - $1,000 | 6.7 |
| $1,001 - $5,000 | 14.6 |
| $5,001 - $10,000 | 5.4 |
| $10,000 and Above | 5.8 |

SOURCE:  Medicare History Sample.

a.   Sample is limited to those enrolled in both HI and SMI and does not
     include those with end-stage renal disease.

TABLE D-3.  DISTRIBUTION OF DISABLED ENROLLEES BY LEVEL OF
          MEDICARE-RELATED COST-SHARING, 1978

| Cost-Sharing Amounts[a] (1984 dollars) | Percent of Disabled Enrollees |
|---|---|
| Less than $300 | 51.8 |
| $301 - $500 | 17.6 |
| $501 - $1,000 | 16.8 |
| $1,001 - $2,000 | 9.9 |
| $2,001 - $3,000 | 2.2 |
| $3,001 - $4,000 | 0.8 |
| More than $4,000 | 0.9 |

SOURCE:  Medicare History Sample.

a.   This figure includes SMI premiums and all Medicare deductibles and
     coinsurance.  The Medicare History Sample does not capture all SMI
     liability.  For those who do not meet the deductible limit, it is not
     possible to estimate their Medicare liability precisely.  Thus, $40--
     reflecting the missing data--has been added to each enrollees liability.

# APPENDIX E.    FINDINGS FROM THE RAND STUDY

As briefly described in Chapter IV, an ongoing study conducted for the Department of Health and Human Services by the Rand Corporation represents the most comprehensive attempt yet made to model the effects of changes in insurance cost-sharing on medical care use and health status.

The results thus far are consistent with earlier nonexperimental findings in this area: with only a few exceptions, price affects both the number of people using medical services and the number of ambulatory medical visits per user. That is, for physician visits, both the percentage of persons seeking care and the frequency of their visits rise as cost-sharing declines. For hospital use, the number of users was negatively related to cost-sharing but cost per person was not. (This latter result may, however, be attributable to a cap placed on patient liability, which meant that, beginning early in a hospital stay, additional days and services would be covered at no cost.[1]) The other major exception to the general findings was that medical expenditures for children were not as responsive, particularly in the case of hospitalization.

In the Rand study, families were assigned to different insurance plans (where the amounts of deductibles and coinsurance varied) by a technique ensuring that individual and family characteristics of participants were similar for all plans. Consequently, different patterns of health use observed among the plans may be attributed to differences in the deductibles, coinsurance, and liability "cap." Coinsurance rates, reflecting the fraction of the bill paid by the family, were varied between 0 (free care) and 95 percent. A maximum dollar expenditure limit of $1,000 was set on the family's liability--a limit comparable to about $1,635 of health care in 1982.[2] In the plan with 95 percent coinsurance (on outpatient services), a lower cap of $150 per person or $450 per family implicitly made the plan

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1.   The cap was set at $1,000 or 5, 10, or 15 percent of income, whichever was lower (and depending upon the plan). Seventy percent of hospitalized patients reached their cap, meaning that no further cost-sharing was assessed. If the limit had been higher, it is possible that some effect on cost per hospital case would have been observed.

2.   This figure is inflated by the health care component of the Consumer Price Index and thus reflects the amount of health services that could be consumed.

similar to an insurance scheme with a high initial deductible but comprehensive coverage for large expenses.

Total expenditures on health care varied considerably by type of insurance coverage. At the lowest extreme, families facing 95 percent coinsurance used only $254 worth of health care while, on average, those with free care (no coinsurance) used $401. Even a 25 percent coinsurance plan resulted in outlays 16 percent less than for free care.

Ambulatory expenditures also display the same patterns, both in the aggregate and among the various sample sites. Since figures for expenditures obscure differences in amounts of care and cost per service, the Rand results are also presented by number of visits. Much of the difference in ambulatory expenditures is attributable to the amount of care used, rather than to variations in cost per visit.

The results for hospital care are more ambiguous, with only the rate of hospital admission being very sensitive to type of plan. For adults, probability of hospital admission varied from 0.133 for those with free care to 0.082 for those facing 50 percent coinsurance. Expenditures once in the hospital show little variation among insurance plans.

Finally, as noted in Chapter IV, these findings suggest that coinsurance on physician visits may have an important impact on hospital use. The study finds that for families in the plan with 95 percent coinsurance on ambulatory services but free care for inpatient services, probability of hospital admission is lower than for families whose insurance fully pays for all types of care. This at first consideration seems counterintuitive since one might expect that families with free hospitalization but high coinsurance costs for outpatient care would attempt to substitute inpatient for outpatient services whenever possible. Rather, it suggests that it is the doctor who initiates hospitalization for a patient. If persons visit doctors less often as a result of high ambulatory coinsurance rates, this in itself seems likely to hold down hospital admissions even when hospital care is "free."

## APPENDIX F.  AVERAGE INCREASE IN MEDICARE COST-SHARING FROM VARIOUS OPTIONS, BY AGE AND TYPE OF ENROLLEE

The tables in this appendix show the average increase in Medicare cost-sharing that would occur under the options described in Chapter V, by type of enrollee--aged or disabled--and by age of enrollee.  Based on simulations from the Medicare History Sample, these results are applicable to all those enrolled in both HI and SMI.  Although this includes most aged beneficiaries, over 8 percent of disabled HI beneficiaries are not enrolled in SMI.

The results for the disabled, which are not discussed in detail in Chapter V, differ from those for the elderly because of different patterns of use of Medicare-covered services.  This is particularly the case for SMI coverage, where the disabled are more likely to use Medicare services than the elderly.

The first three options--increasing the SMI premium, the SMI deductible, and the HI deduction--are not shown in a table since they vary little by age group.  For the disabled, not all of whom participate in SMI, the $70 increase in SMI premiums in calendar year 1984 would only average $64 among all disabled Medicare beneficiaries.  The increase in the SMI deductible for the disabled would be very similar to the amount for the elderly--averaging $13 per enrollee in 1984.

TABLE F-1. AVERAGE INCREASE IN MEDICARE COST-SHARING COINSURANCE OPTIONS BY AGE AND TYPE OF MEDICARE ENROLLEE (In 1984 dollars)

| Age and Type of Enrollee | 25 Percent SMI Coinsurance | 10 Percent Hospital Coinsurance | 10 Percent Hospital Coinsurance on Days 2-30 |
|---|---|---|---|
| Elderly | 40 | 72 | 52 |
| 65-69 | 36 | 52 | 38 |
| 70-74 | 39 | 55 | 40 |
| 75-79 | 41 | 81 | 63 |
| 80 and above | 47 | 109 | 76 |
| Disabled | 54 | 68 | 38 |
| Under 45 | 46 | 59 | 33 |
| 45-54 | 57 | 59 | 24 |
| 55-64 | 58 | 78 | 50 |

SOURCE: Congressional Budget Office simulations using the Medicare History Sample.

TABLE F-2. AVERAGE INCREASE IN MEDICARE COST-SHARING FOR COMBINATION OPTIONS BY AGE AND TYPE OF MEDICARE ENROLLEE (In 1984 dollars)

| Age and Type of Enrollee | 10 Percent Hospital Coinsurance and Increased SMI Premium[a] | 10 Percent Hospital Coinsurance and Increased SMI Coinsurance[a] | Coinsurance Changes on Hospitals, SNFs, and Home Health[a] |
|---|---|---|---|
| Elderly | 120 | 112 | 74 |
| 65-69 | 106 | 88 | 53 |
| 70-74 | 108 | 94 | 56 |
| 75-79 | 131 | 122 | 84 |
| 80 and above | 145 | 156 | 112 |
| Disabled | 110 | 122 | 69 |
| Under 45 | 105 | 105 | 60 |
| 45-54 | 96 | 116 | 60 |
| 55-64 | 122 | 135 | 80 |

SOURCE:   Congressional Budget Office simulations using Medicare History Sample.

a.   See Chapter V for a more detailed definition of the options.

TABLE F-3. AVERAGE ADDITIONAL MEDICARE COST-SHARING FOR HOSPITAL COINSURANCE WITH VARIOUS COST-SHARING LIMITS BY AGE AND TYPE OF ENROLLEE (In 1984 dollars)

| Age and Type of Enrollee | 10 Percent Hospital Coinsurance and Limits on Cost-Sharing of: | | | | | |
|---|---|---|---|---|---|---|
| | 1,000 | 2,000 | 3,000 | 4,000 | 2,000-4,000a | 1,500-3,000b |
| Elderly | -81c | 15 | 46 | 59 | 29 | 10 |
| 65-69 | -70 | 5 | 29 | 40 | --d | --d |
| 70-74 | -80 | 2 | 28 | 40 | --d | --d |
| 75-79 | -70 | 29 | 61 | 73 | --d | --d |
| 80 and above | -106 | 29 | 76 | 93 | --d | --d |
| Disabled | -145 | -35 | 9 | 31 | -14 | -40 |
| Under 45 | -116 | -30 | 3 | 20 | --d | --d |
| 45-54 | -174 | -58 | -10 | 17 | --d | --d |
| 55-64 | -146 | -25 | 22 | 45 | --d | --d |

SOURCE: Congressional Budget Office simulations using the Medicare History Sample.

a. This limit would vary by income: $2,000 for those with family income less than $20,000, $4,000 for those with incomes above $22,000, and a gradual phase-in between $20,000 and $22,000.

b. This limit would vary by income: $1,500 for those with family income less than $20,000, $3,000 for those with incomes above $21,500, and a gradual phase-in between $20,000 and $21,500.

c. Average decrease indicated by negative numbers.

d. Not available.